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EXAMINER	
AN, SHAWN S	

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/483,883	ONO ET AL.	
	Examiner	Art Unit	
	Shawn S. An	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-17,19-27,29 and 30* is/are rejected.

7)☒ Claim(s) *18 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. As per Applicant's instructions as filed on 1/02/07, claims 1-12 have been canceled, claims 13, 19-21, 25, and 27 have been amended, and claims 28-30 have been newly added.

Response to Remarks

2. As per Applicant's remarks/arguments regarding claim 14, please refer to the following grounds of rejection.

Furthermore, Applicant's arguments with respect to amended claims have been carefully considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claim 28 is objected to because of the following informalities: On claim 28, last para., line 6 (from page 8), the recited "a microcomputer" should be changed to "a second microcomputer" to avoid/overcome lack of antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 13-17, 19-24, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al (5,627,583) in view of Kato (4,831,444).

Regarding claims 13 and 27, Nakamura et al discloses an endoscope, comprising:

a first endoscope (Fig. 1(a), 1) and a second endoscope (Fig. 1(b), 2) including:

an elongated insert portion (1, 2);

a solid state image pick up device (11,12; CCD) for picking up an image, and being provided to an end portion of the insert section (Figs. 1-2);

a general purpose video processing circuit (Fig. 2, 16) including a drive signal generation section (Fig. 4, 21) for driving the solid state device, and a video signal processing section (Fig. 2, 13, 14, and 16-17) for producing a standard video signal in response to an output signal outputted from the solid state image pickup device;

a signal processing adjusting section (Figs. 4 and 5, 25; Fig. 8, 90-92) for adjusting signal processing with respect to the video signal processing section, and sync signal generation circuit (Fig. 4, 22; Fig. 5, 42; Fig. 8, 77; Fig. 12, 105) for generating sync/timing signal required for each circuit (col. 5, lines 14-20).

a video signal output connector (output from element 17; inherently represented as ***an arrow***, an output from the D/A element) for outputting the standard video signal outputted from the GP video signal circuit to an external display unit (to TV monitor) (col. 4, lines 65-67); and

the second endoscope including all of its affiliated limitations, which are substantially identical to the first endoscope (except it's second device/circuit) and all of its affiliated limitations as discussed above;

wherein for at least *one* of when the first image pickup device (11) of first endoscope and the second image pickup device (12) of second endoscope are different in length, and when the first image pickup device (11) of first endoscope and the second image pickup device (12) of second endoscope are different (High density pixel type VS compact pixel type) in number of pixels, the first and the second GP video processing circuit are constituted by a common GP video processing circuit (Figs. 2 and 4, 16), wherein the first and the second adjusting circuits are constituted by a common adjusting circuit (Figs. 4 and 5, 25; Fig. 8, 90-92).

Nakamura et al does not specifically disclose an adjusting circuit including a timing adjusting section for performing timing adjustment of the drive signal by receiving and thereafter delaying the drive signal generated by the drive signal generating section in accordance with a delay time and transmitting the delayed drive signal to the solid state image pick-up device such that the output signal to be inputted to the general purpose video processing circuit has a correct timing.

However, Nakmura further discloses that a sync signal generated by the sync signal generation circuit (77) being applied to the CCD driver (82) which drives system CCDs provided in an extreme end portion of the endoscope on the basis of the sync signal (col. 9, lines 4-11), and since the system clock required for each sync circuit is different, a sync signal generating circuit is adapted (implies adjusting) for the endoscope B2 (col. 6, lines 49-56).

Furthermore, by definition, a general synchronized operation mode would normally indicate a mode where system circuits are connected and controlled to operate at a same frequency (inverse time) to be in a synchronized mode.

Moreover, Kato teaches an endoscopic adjusting circuit including a timing adjusting section (Fig. 15, 36) for performing timing adjustment of the drive signal by receiving and thereafter delaying the drive signal generated by the drive signal generating section (22) in accordance with a delay time and transmitting the delayed drive signal to the solid state image pick-up device (20) (from 36 to 38 to 40 to 34 to 22 to finally 20) such that the output signal to be inputted to a general purpose video processing circuit (12) has a correct timing, and a signal processing section (30) for signal processing with respect to the video signal processing section (12), thereby adverse effect of delay and deterioration of signal during transmission through the signal line are compensated for irrespective of variations of the length of the signal line and with a simple construction (col. 2, lines 5-12).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing an endoscope as taught by Nakamura et al to incorporate Kato's teachings as above so that the adjusting circuit includes a timing adjusting section for performing timing adjustment of the drive signal by receiving and thereafter

delaying the drive signal generated by the drive signal generating section in accordance with a delay time and transmitting the delayed drive signal to the solid state image pick-up device such that the output signal to be inputted to a general purpose video processing circuit has a correct timing, thereby adverse effect of delay and deterioration of signal during transmission through the signal line are compensated for irrespective of variations of the length of the signal line and with a simple construction.

Regarding claim 14, Nakamura et al's video processing circuit and Kato's adjusting circuit appears to be disposed in an operation section arranged close to a proximal end of the insertion section (see above). Therefore, it would have been considered obvious design choice to place the video processing circuit and the adjusting circuit to be disposed in an operational section arranged at a proximal end of the insertion section for better utilization of the endoscope structure.

Regarding claims 15-17, Nakamura et al discloses various types of peripheral units and a CPU for controlling a front operation panel being also provided in the camera control unit (includes video processing circuit and adjusting circuit) (col. 4, lines 14-18), and the CPU for control purposes inputs control signals from an unillustrated front operation panel, and controls various peripheral units on the basis of the input control signals (col. 5, lines 1-5). Furthermore, Kato teaches the adjusting circuit as discussed above.

Therefore, it would have been considered obvious design choices for one of skill in the art to recognize that the video processing circuit being mounted on a first common board along with a first microcomputer that perform operation setting of the video signal processing unit, and the adjusting circuit being mounted on a second common board along with a second microcomputer for controlling adjusting circuit.

Regarding claim 19, Kato teaches the timing adjusting section comprises a delay amount adjusting circuit (Fig. 15, 36) which receives the drive signal generated by the drive signal generating section (22) and a signal corresponding to an amount of a delay time and thereafter delays the received drive signal and transmits the delayed drive signal to the solid state image pick-up device (20).

Regarding claim 20, Kato teaches the delay amount adjusting circuit (Fig. 15, 36) correcting a time delay for the drive signal outputted by the drive signal generating section (22) to be applied to the image pickup device (20), and a time delay for the output signal outputted from the image pickup device to be inputted to the video processing section (30), to input the output signal to the video processing section at a predetermined timing (it would be a predetermined timing after the time delay has taken effect).

Regarding claim 21, the Examiner takes official notice that a video processing circuit utilizing a DSP is well known in the art (see also Inoue (6,099,465); Fig. 1, 25). Therefore, it would have been considered obvious for one of skill in the art to recognize that the video processing circuit could constitute using a DSP to take advantage of digital signal processing, whereby the digital signal processing enhances the signal.

Regarding claim 22, Kato teaches a wave shaping (matching) circuit for performing wave shaping of the drive signal and applying the wave shaped drive signal to the solid-state image pickup device (col. 1, lines 31-40; col. 2, lines 5-12), and the drive signal (Fig. 15, 22) timing adjusted by the (delay) timing section (36).

Therefore, it would have been considered obvious for one of skill in the art to recognize that the wave shaping circuit performs wave shaping of the drive signal timing adjusted by the timing section and applies the wave shaped drive signal to the solid-state image pickup device so that adverse effects of delay and waveform deterioration of a signal during transmission through the signal line are compensated.

Regarding claim 23, the Examiner takes official notice that a light guide for transmitting illuminating light, wherein an end portion of the light guide being detachably connected to an external light source is well known in the art (see also Takahashi et al (6,215,517 B1); Fig. 1, 103 and 201). Therefore, it would have been considered obvious for one of skill in the art to recognize a light guide for transmitting illuminating light, wherein an end portion of the light guide being detachably connected to an external light source for efficient way to illuminate/transmit light in order to take quality images.

Regarding claim 24, Nakamura et al discloses a pixel number adjusting section (Figs. 4 and 5, 23 and 43, respectively) for adjusting signal processing by the video

signal processing section compatibly with different numbers of pixels of the solid state image pickup device ((Figs. 1(a)-1(b), 11-12; col. 5, lines 20-30; col. 6, lines 31-56).

Regarding claim 29, Nakamura et al discloses video signal output connector as discussed above. Furthermore, the Examiner takes official notice that outputting a plurality of standard video signals of different type for accommodating a plurality of display devices requiring different formats for display is well known in the art. Therefore, it would have been considered obvious for the video signal output connector to output a plurality of standard video signals of different type in order to accommodate a plurality of display devices requiring different formats for display.

6. Claims 25-26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al and Kato as applied to claim 13 above, and further in view of Wilk (5,368,015).

Regarding claim 25, Nakamura et al and Kato do not seem to particularly disclose an electrical bending portion for controlling bending of a bending portion provided to the insert section.

However, Wilk teaches an electrical bending portion for controlling bending of a bending portion (Fig. 5, 200, 202) provided to the insert section (col. 8, lines 8-22 and lines 27-39).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing an endoscope as taught by Nakamura et al to incorporate Wilk's teaching as above so that the electrical bending portion controls bending of a bending portion provided to the insert section for flexibility, thereby being able to perform endoscopic operations more accurately.

Regarding claim 26, Nakamura et al and Kato do not seem to particularly disclose an external remote control circuit detachable connected to the endoscope.

However, Wilk teaches an automated surgical system comprising an external remote control circuit (Fig. 5, 236, 238) detachably connected to an endoscope for controlling linear movement, distal end bending, and tip operation of endoscopic instruments (col. 8, lines 51-54).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing an endoscope as taught by Nakamura et al to incorporate Wilk's teaching as above so that the external remote control circuit is detachably connected to an endoscope for controlling linear movement, distal end bending, and tip operation of endoscopic instruments in a remote place.

Regarding claim 30, Nakamura et al discloses the general purpose video signal processing unit as discussed above.

Nakamura et al and Kato do not seem to particularly disclose a connecting terminal for a remote control provided outside the endoscope for remote controlling the general purpose video signal processing unit.

However, Wilk teaches an automated surgical system comprising a connecting terminal (Fig. 5, 230) for an external remote control circuit (236, 238) provided outside the endoscope for remote controlling linear movement, and tip operation of endoscopic instruments (col. 8, lines 51-54).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing an endoscope as taught by Nakamura et al to incorporate Wilk's teaching as above so that the connecting terminal for a remote control is provided outside the endoscope for remote controlling Nakamura's general purpose video signal processing unit in order to drive the solid state image pick up device.

Allowable Subject Matter

7. Claim 18 is objected to as being dependent upon a rejected base claim 13, but would be allowable:

if claim 18 is rewritten in independent form including all of the limitations of the base claim 13 and any intervening claims.

Dependent claim 18 recites a novel feature, wherein the prior art of record fails to anticipate or make obvious the novel feature.

Accordingly, if the amendments are made to the claim listed above, and if rejected claims are canceled, the application would be placed in a condition for allowance.

8. Claim 28 is allowed (contingent upon the claim objection correction; see ***Claims Objections*** as discussed above).

Independent claim 28 recites a novel feature, wherein prior art of record fails to anticipate or make obvious the novel feature.

Accordingly, if the amendments are made to the claim listed above, and if rejected claims are canceled, the application would be placed in a condition for allowance.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

A) Inoue (6,099,465), Electromagnetically coupled electronic endoscope system.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S An* whose telephone number is 571-272-7324.

12. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHAWN AN
PRIMARY EXAMINER

7/24/07